

Section 1 – Introduction

1.1 Background

Traffic Flow Management Infrastructure (TFM-I), as a component of the NAS Architecture, provides the decision support systems to balance NAS capacity and growing flight demands within a dynamic environment. The NAS environment is characterized by a high degree of uncertainty due to changing weather and unpredictable system constraints. The present TFM-I has evolved through several generations of hardware and software to provide strategic traffic flow management. Additional enhancements are planned to increase integration and interoperability with the overall air traffic management structure. The long-term viability of the present TFM-I architecture, including the currently configured hardware and software, is of concern for a number of reasons. Among these concerns are hardware supportability issues, increasing difficulty in maintaining and modifying the software to support new requirements, integrating new and existing TFM-I systems and functionality, and increasing difficulty in maintaining software expertise within FAA, Department of Transportation, and contractor staffing.

The Traffic Flow Management Modernization (TFM-M) Program seeks to modernize current TFM-I to increase integration and interoperability with the overall air traffic management structure. In order to ensure a successful transition from existing TFM-I capabilities to the new system components introduced with TFM-M, it is important that a baseline be established that provides a reference point of existing capabilities available in the TFM-I domain. An audit of existing capabilities and functions will help to ensure that, as the system level requirements and architecture evolution strategy are developed for TFM-M, existing functions that are key to FAA operations, and that are required to be retained in the baseline, are included in the TFM-M system level requirements and supported by the architecture.

1.2 Objective

The objective of the TFM-I Functional Audit is to document automation capabilities existing in the current TFM-I domain. Additionally, the Audit seeks to capture how the current TFM toolset is used by FAA service providers in the performance of traffic flow management activities. It is intended that this Functional Audit support TFM Modernization requirements development.

1.3 Scope

This document focuses on the capabilities existing in current national tools that are used for traffic flow management. Locally developed/acquired tools are not emphasized in this Audit. Only tools that have been deployed for operational use are included in this Audit. Prototype tools such as the Collaborative Routing Coordination Tools (CRCT) have not been included. The baseline for functions described in this Audit is the Enhanced Traffic Management System (ETMS) Version 7.5, scheduled for release in November 2002. Unless otherwise noted, functions

described for other TFM tools are current as of October 2002. The emphasis of this Audit is on how the tools are used, not on how the tools are implemented.

1.4 Document Organization

Section 1 – Introduction, the current section, provides an overview of objectives and scope of this Audit task.

Section 2 – Document References provides a list of documents used in researching the TFM automation capabilities.

Section 3 – Approach describes the approach used for the analysis and presentation of the results of the Audit task.

Section 4 – TFM System Overview presents an overview of the TFM domain, including the facilities and internal and external users of the TFM system.

Section 5 – Traffic Management Activities describes how the tools and processes support the functions of the traffic management units in NAS.

Section 6 – TFM Tools and Products describes tools used for TFM functions

Section 7 – TFM Support Activities/Functions presents support activities and functions provided within the TFM domain.

Section 8 – Acronyms and Abbreviations contains a list of acronyms and abbreviations used in this document.

Section 9 – Glossary explains commonly used terms within the TFM domain.

Appendices provide detailed descriptions of various topics:

Appendix A – Collaborative Decision Making

Appendix B - Strategic Plan of Operation

Appendix C – Aggregate Demand List (ADL) Format.